



# UNIVERSITY OF ILLINOIS EXTENSION

College of Agricultural, Consumer, and Environmental Sciences

## *Illinois Fruit and Vegetable News*

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*a newsletter for commercial growers of fruit and vegetable crops*

*"We are what we repeatedly do. Excellence, then, is not an act, but a habit." Aristotle*

Address any questions or comments regarding this newsletter to the individual authors listed after each article or to its editor, Rick Weinzierl, 217-333-6651, [weinzierl@uiuc.edu](mailto:weinzierl@uiuc.edu). The *Illinois Fruit and Vegetable News* is available on the web at: <http://www.ipm.uiuc.edu/ifvn/index.html>. To receive email notification of new postings of this newsletter, call or write Rick Weinzierl at the number or email address above.



Stewart's wilt symptoms in sweet corn.

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**University of Illinois Extension Specialists in Fruit & Vegetable Production & Pest Management**

### *Regional Updates*

**At the Dixon Springs Agricultural Center**, fifteen varieties of tomato transplants are growing for planting in a high tunnel project. The Proceedings of the Illinois Small Fruit and Strawberry School has been completed and printed, and we look forward to seeing everyone on March 7 and 8. We received word yesterday that the Illinois Small Fruit and Strawberry School has received approval to provide CEU's for Certified Crop Advisors. Sign up

sheets will be available at the meeting for those wishing credit for attendance. We are still looking for a source of compost in southern Illinois and would welcome an email from anyone aware of one. The plasticulture strawberries at DSAC look good at this point, and we will likely remove the row covers soon. Some growers in the area have already begun row cover removal while others are waiting for the cooler temperatures forecast for the upcoming weekend to pass.

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## ***Upcoming Meetings and Programs***

### **March 7-8, 2006, Small Fruit & Strawberry Schools ...**

... at the Mount Vernon Holiday Inn. For more information, contact Elizabeth Wahle at 618-692-9434 or by email at [wahle@uiuc.edu](mailto:wahle@uiuc.edu), or Bronwyn Aly at 618-695-2444 or by email at [baly@uiuc.edu](mailto:baly@uiuc.edu). Also check for information at "News for Southern Illinois Growers" at: <http://web.extension.uiuc.edu/regions/hort/>.

### **March 13-14, 2006, Ohio Berry Grower / Blueberry Grower Training Program ...**

... at the Ohio State University South Centers at Piketon, in Piketon, Ohio. The program runs from 9:00 to 5:00 on the 13<sup>th</sup> and 8:00 to 5:00 on the 14<sup>th</sup>; cost is \$100, including sessions, notebooks, hands-on training, and lunches. For more information, contact Brad Bergefurd or Charity Crabtree at 740-289-2071 or by email at [bergefurd.1@osu.edu](mailto:bergefurd.1@osu.edu).

## ***Fruit Production and Pest Management***

### ***Reminders on Prebloom Oil Sprays for Control of San Jose Scale, Rosy Apple Aphid, and European Red Mite on Fruit Trees***



European red mite eggs on an apple twig. Photo by Cornell University.

It's time for my annual reminder that application of a "superior oil" between green tip and bloom (by pink) is a pest management practice that should be completed in every apple orchard in Illinois (and in some peach orchards, blueberries, and grapes as well). Applying a superior oil (= horticultural oil) at the period roughly defined as between green tip and pink puts a fine coating of oil on the twigs of perennial fruit crops and suffocates San Jose scale, European red mite eggs, and rosy apple aphid eggs that have overwintered on the twigs of apples. San Jose scales and European red mites also overwinter on twigs and later feed on the twigs or foliage of peaches, blueberries, and grapes as well.

Superior oils are refined to be safe to specific woody plants and formulated to be emulsifiable in water at concentrations of 1 to 2 percent by volume. Applications at green tip are most effective against San Jose scale, and applications nearer to pink are

more effective against European red mite, but oil applications at any time in this period are very valuable ... they are low in cost and cause no adverse effects to beneficial species when applied at this time. For added control of rosy apple aphid, add Lorsban, Supracide, or diazinon to an oil application at pink. Check the [2006 Midwest Tree Fruit Spray Guide](#) and the [2006 Midwest Small Fruit and Grape Spray Guide](#) for rates and recommendations for specific fruit crops.

A few years ago when there were few effective postbloom miticides available in apples and peaches and when labels for Apollo and Savey allowed only prebloom applications, a common recommendation was to use one of these products prebloom in orchards where European red mite was a problem the previous summer. Now that several good postbloom miticides are available, prebloom applications of miticides other than oil are really not necessary ... growers can wait until they know that mites are present at levels that need to be controlled and then apply a miticide. For apples, miticides that work well early in the season (shortly after petal fall) but are less suited for midsummer use include Agrimek, Savey, and Apollo; miticides that are better suited for midsummer use include Nexter, Acramite, and Zeal. Fujimite, Envior, and Kanemite also are labeled for use on apples, but entomologists in the lower Midwest have not had the opportunity to evaluate these products to assess their best fit in our circumstances. Summer oils (emulsifiable horticultural oils applied at up to 1 percent by volume) also suppress mite populations in apples; do not use them with Captan or within 14 days of a Captan application because plant injury will result. Also keep in mind that summer oils help to keep mite numbers low but usually do not give adequate control if infestations are already well above the threshold (5 mites/leaf in midsummer).

In peaches ... red mites less often occur at outbreak levels (but sometimes do). Dormant oil applied before bloom is always a good idea; Nexter, Acramite, and Envior are now labeled in peaches for postbloom application; Apollo, Savey, and Vendex also are registered. If early sprays are needed, use Apollo or Savey; count on Acramite or Nexter in early to mid summer for later infestations.

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## ***Vegetable Production and Pest Management***

### ***Resistance to Gray Mold?***

An AgriNews article dateline February 26 – West Lafayette, IN discusses the recent discovery of a gene that imparts gray mold resistance. Unfortunately this gene is also associated with a number of additional problems such as enhanced susceptibility to some other pathogens and also abnormally short root development of plants with this gene. Hopefully this may be the starting point for genetic resistance in commercial horticulture crops ..... time will tell. For more information the article can be found at [AgriNews](#).

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### ***The Great Lakes Vegetable Working Group and IPM Adoption Surveys***

The previous issue of this newsletter noted that IPM Adoption surveys are on the web for various vegetable crops grown in the midwestern US and Ontario, Canada. I encourage Illinois growers to connect to the home page for the Great Lakes Vegetable Working Group at <http://glvwg.ag.ohio-state.edu/> and click on the link to these IPM Adoption surveys. Taking a few minutes to fill them out – for sweet corn, pumpkins, and horseradish in Illinois – provides valuable information as extension specialists throughout the region try to structure programs that meet your needs (and as we attempt to garner funding to deliver those programs). The home page for the Great Lakes Vegetable Working Group also provides links to resources available on the web from around the region. If you need printed copies of the IPM adoption surveys, please contact me (Rick Weinzierl) at the phone number below, or contact Jim Jasinski of Ohio State University at 937-484-1526

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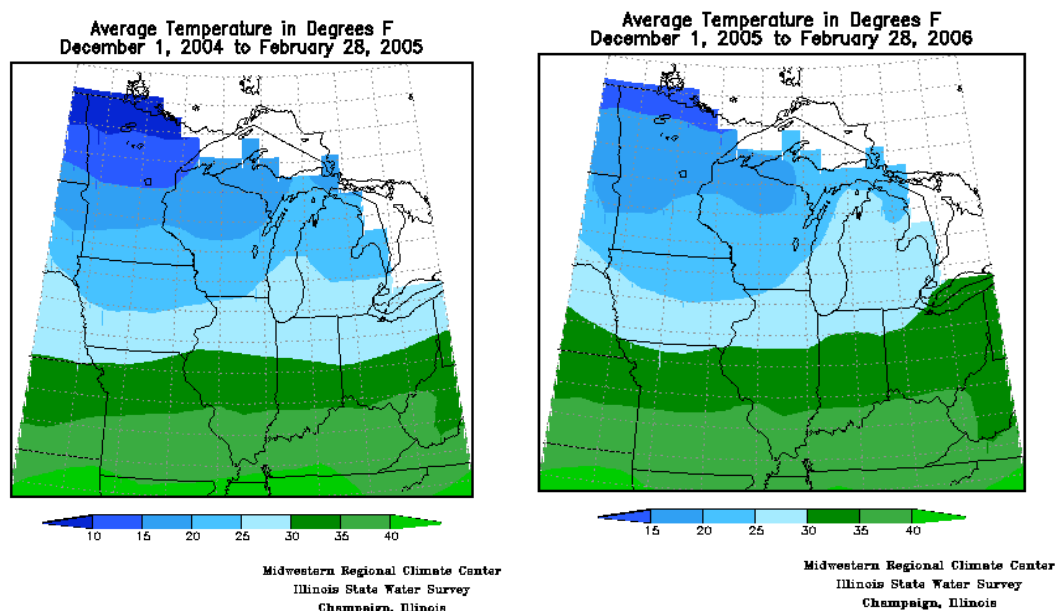
## New Edition of Vegetable Insect Management Available

A second and expanded edition of *Vegetable Insect Management*, edited by Rick Foster of Purdue University and Brian Flood of Del Monte Foods, has been published by Meister Press. This edition offers broader geographical coverage, more color illustrations, and a CD with lots of additional information. It's well worth the price at \$64.00. Order from Meister by calling 1-800-572-7740 (ext. 168) or by using their on-line order system at [www.meisterpro.com](http://www.meisterpro.com) (use the promotional code VIM05).

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## Another Warm Winter, Another Year of Corn Flea Beetles?

Average winter temperatures in Illinois in 2005-06 were very similar to those of one year ago (Figures 1 and 2). Warm temperatures during the months of December, January, and February favor increased survivorship of the corn flea beetle and the bacterium it vectors.



Figures 1 and 2. Average winter temperatures of 2004-2005 and 2005-2006.

Corn flea beetles are the primary vector of Stewart's wilt. *Erwinia stewartii*, the bacterium that causes Stewart's wilt, survives the winter in the gut of the corn flea beetle, and survival of the corn flea beetle is dependent on winter temperatures. Warmer winters result in greater survivorship of corn flea beetles, thus increasing the potential for Stewart's wilt. Using the average temperature of December, January, and February, the potential of Stewart's wilt can be predicted (Table 1).

Table 1. Projected risk of Stewart's wilt based on the average temperatures of December, January, and February.

Average temperature of December, January, & February	Probably of early season wilt	Probably of late season blight
<27° F	Absent	Trace, at most
27 - 30° F	Light	Light to Moderate
30 - 33° F	Moderate	Moderate to Severe
>33° F	Severe	Severe

Corn flea beetles become active in the spring when temperatures rise above 65°F, and they feed on and transmit Stewart's wilt bacteria to seedling corn plants. The bacterium can spread systemically throughout the plant. Although most commercial field corn hybrids are resistant to Stewart's wilt, the disease is still a concern for susceptible seed corn inbreds and many sweet corn hybrids.

There are two phases of Stewart's wilt: the seedling wilt phase and the leaf blight phase. The seedling wilt stage occurs when seedlings become infected at or before the V5 stage. The vascular system becomes plugged with bacteria, causing the seedling to wilt, become stunted, and die. Infections of older corn plants usually result in the development of the leaf blight phase of Stewart's wilt. This phase is characterized by long, yellow to chlorotic streaks with wavy margins along the leaves. When the late infection phase or "leaf blight phase" of Stewart's wilt occurs after tasseling, it is generally not a concern in sweet corn because ears are harvested before damage occurs.

Based on the recent winter temperatures from the Midwest Regional Climate Center, estimates of early season Stewart's wilt are shown in Table 2. Remember, however, that these are only predictions; numbers of surviving corn flea beetles are not known. However, with high populations in 2005 and the warm winter months, spring populations look to be high.

**Table 2.** 2006 early season Stewart's wilt predictions.

Location	Average temperature December 2005 through February 2006	Potential of early season disease
Freeport	26	Absent
DeKalb	27	Light
Stelle	29	Light
Monmouth	29	Light
Peoria	31	Moderate
Champaign	32	Moderate
Springfield	33	Moderate
Belleville	36	Severe
Rend Lake	37	Severe
Dixon Springs	38	Severe

Dr. Jerald (Snook) Pataky looked at previous year's data and 2005-06 temperatures and offered the following predictions:

- about a 70% chance of more than 2% Stewart's wilt and about a 35% chance of more than 5% on moderately susceptible and susceptible hybrids as far north as Dwight and Monmouth.
- about a 90% chance of more than 2% Stewart's and about a 65% chance of more than 5% on moderately susceptible and susceptible hybrids from Goodfield to Urbana, Perry, and New Berlin.
- about a 70% chance of more than 2% Stewart's and about a 65% chance of more than 5% on moderately susceptible and susceptible hybrids from Brownstown south to Belleville and Carbondale.
- For hybrids that are moderately resistant to resistant, there is only about a 30% chance of more than 2% Stewart's wilt at the 7 southernmost locations, and less than a 20% chance of more than 5% Stewart's wilt at any of the locations.

Options for limiting losses to Stewart's wilt include planting resistant hybrids or controlling flea beetles by use of systemic seed treatments (Gaucho or Cruiser) or foliar insecticides. For information on the susceptibility of specific hybrids to Stewart's wilt, check the sweet corn disease nursery website provided by Snook Pataky (<http://sweetcorn.uiuc.edu/stewarts.html>). For more information on corn flea beetle and Stewart's wilt, check the fact sheet at [http://www.ipm.uiuc.edu/vegetables/insects/corn\\_flea\\_beetle.pdf](http://www.ipm.uiuc.edu/vegetables/insects/corn_flea_beetle.pdf).

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### ***Production Tips for Northern Illinois Halloween Pumpkins***

It's always worth remembering that early planning is the key to successful harvest. With that in mind, here are few reminders on pumpkin production ...

Pumpkins for Halloween should be planted during the last week of May to early June in northern Illinois. Plant the seeds 1 inch deep in warm soil (optimum soil temperature for germination is 70-85 °F). Spacing within rows and between rows may vary since vining varieties require more space compared to bushy varieties. Fertilizer requirements depend on the previous crop grown at the site and on soil test results. Pumpkins and other cucurbits (cucumbers, muskmelons, watermelons, summer squash, and winter squash) require pre-plant application of 50 lb nitrogen per acre. Phosphorus and potassium fertilizer applications depend on soil test results. Side-dressing with nitrogenous fertilizers depends on soil organic matter content and previous crop grown at the site.

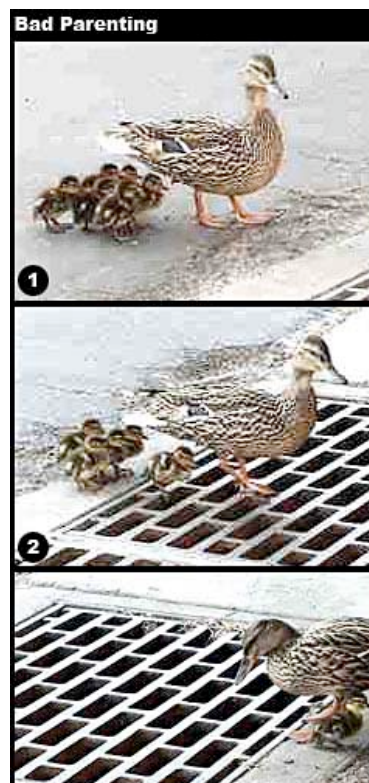
Keep the field weed-free when the seedlings are small. You can control weeds by mechanical methods or by using pre-emergence and post-emergence herbicides recommended in the [Midwest Vegetable Production Guide for Commercial Growers](#).

You can use soil-applied systemic insecticides such as Furadan and Admire at planting to control cucumber beetles or wait and apply foliar sprays as needed. Begin scouting as soon as plants emerge, and treat with recommended insecticides when a threshold level of five beetles per plant is reached (or fewer on seedling plants). Bees are needed for pollination; 1 honey bee hive per acre is recommended for pumpkins. During flowering, if insecticides are needed to control cucumber beetles, squash bugs, or squash vine borer, apply them in the evening when bees are no longer foraging. Follow regular spray schedules to control pumpkin diseases such as powdery mildew, downy mildew, black rot, phytophthora rot, and microdochium blight. During extended periods of drought in mid summer you may need to irrigate pumpkins. For good production, pumpkins must get adequate moisture at flowering and when the fruit is sizing. For more information on pumpkin production, refer to the [2006 Midwest Vegetable Production Guide for Commercial Growers](#).

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### ***Words of Wisdom***

Another picture that's worth more than a few words ...



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